



The Whinless Down Academy Trust – Design Technology Progression of Skills Document

Expected at the End of EYFS - We have selected the Early Learning Goals that link most closely to the Design Technology National Curriculum

Expressive Arts and Design (Exploring and Using Media and Materials)

Children safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.

Expressive Arts and Design (Being Imaginative)

Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories.

Physical Development (Moving and Handling)

Children handle equipment and tools effectively, including pencils for writing.

	KS1	LKS2	USK2
Design	<ul style="list-style-type: none"> Have own ideas and plan what to do next. Explain what I want to do and describe how I may do it. Explain purpose of product, how it will work and how it will be suitable for the user. Describe design using pictures, words, models, templates, begin to use ICT Design purposeful, functional, appealing products for themselves and other users based on design criteria Use knowledge of existing products to produce ideas 	<ul style="list-style-type: none"> Develop and use informed design criteria. Gather information about the needs and wants of particular individuals and groups. Begin to design products that are innovative, functional, appealing and fit for purpose. Begin to generate, develop, model and communicate ideas through discussion, annotated sketches, prototypes, pattern pieces, a cross sectional diagrams and computer aided design. Explain their choice of materials and components that inform the purpose of their products. 	<ul style="list-style-type: none"> Accurately use research using surveys, interviews and questionnaires to inform the design of a product aimed at particular people or groups. With precision, design products that are innovative, functional, appealing and fit for purpose. With precision, generate, develop, model and communicate ideas through discussion, annotated sketches, prototypes, pattern pieces, a cross sectional diagram, exploded diagrams and computer aided design. Confidently explain how the design features of their product will appeal to intended users.
Vocabulary	<i>Planning, investigating, design, ideas, design criteria, product</i>	<i>Planning, investigating, design, ideas, design criteria, product, design brief, innovative, prototype, user, purpose, function, appealing, annotated sketch,</i>	<i>Function, innovative, design specification, design brief, user, purpose design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional</i>

Make	<ul style="list-style-type: none"> Explain what I am making and why it fits the purpose. Make suggestions as to what I need to do next. Describe/explain which tools I'm using and why, then join materials/components together in different ways. Begin to measure, mark out, cut and shape materials and components, with support. Choose suitable materials and explain choices depending on characteristics (including construction materials, textiles and ingredients). Work safely and hygienically according to task. 	<ul style="list-style-type: none"> Begin to use a range of tools and equipment, with some control. Select and use a wider range of materials and components including construction materials and kits, textiles, food ingredients, mechanical components and electrical components with increasing confidence and control. With growing accuracy, explain their choice of materials and components according to functional and aesthetic qualities. Begin to apply a range of finishing techniques, including those from Art & Design. Assemble, join and combine materials and components with some accuracy. Measure, mark out, cut and shape materials and components with some control. 	<ul style="list-style-type: none"> Use a range of tools, with precision, to secure materials accurately. With precision, select and use techniques that involve a number of steps. Demonstrate resourcefulness when tackling practical problems. Accurately explain their choice of materials and components according to functional and aesthetic qualities. Assemble, join and combine materials and components with precision. Measure, mark out, cut and shape materials and components, with confidence and precision.
Vocabulary	<i>Purpose, function</i>	<i>Purpose, function, measure, apply, assemble</i>	<i>Purpose, function, measure, apply, assemble, accurate, precision, mock-up, prototype</i>
Evaluate	<ul style="list-style-type: none"> Talk about my work and describe what went well, thinking about design criteria. Talk about existing products considering: use, materials, how they work, audience, where they might be used and begin to express personal opinion. Begin to evaluate how good existing products are. Begin to evaluate what others have made against a design criteria. Talk about what I would do differently if I were to do it again and why. 	<ul style="list-style-type: none"> Begin to investigate and analyse a range of existing products. With growing confidence, evaluate their ideas and products against their own design criteria. Consider the views of others to improve their work. Begin to understand, discuss and describe well known designers and inventors in DT and their work. Investigate and analyse where and when products were designed and made and whether products can be recycled or reused. Explore what ingredients the product is made from and begin to suggest reasons for this. 	<ul style="list-style-type: none"> Critically investigate and analyse a range of existing products. Critically evaluate their ideas and products against their own design criteria. With precision, collect and consider views from others to find out how to improve their product. Explore the impact of well-known designers, inventors, engineers, chefs and manufacturers and how their products helped to shape the world. Investigate and analyse what impact products have beyond their intended purpose.

Vocabulary	Evaluate, opinion	Evaluate, opinion, evaluating, analyse, view, annotate, investigate, opinion, view	Evaluate, opinion, evaluating, analyse, view, annotate, investigate, opinion, view, investigate, analyse
Technical Knowledge	<ul style="list-style-type: none"> Use own ideas to try to make structure/product stronger, stiffer and more stable. Use levers or slides. Begin to understand how to use wheels and axles. Measure and join materials together to make a product, and explain how I did it and explain choices. 	<ul style="list-style-type: none"> Begin to apply their understanding of how to strengthen, stiffen and enforce more complex structures. With growing confidence, understand and use simple electrical systems such as series circuits incorporating switches, bulbs, buzzers and motors in their products With growing confidence, understand and use mechanical systems such as gears, pulleys, cams, levers and linkages to create movement With growing accuracy, apply their understanding of computing to program, monitor and control their products Know how to program a computer to control their products Understand that materials have functional and aesthetic qualities. 	<ul style="list-style-type: none"> Accurately apply their understanding of how to strengthen, stiffen and enforce more complex structures. Understand and use more complex electrical systems in their products Accurately understand and use mechanical systems such as gears, pulleys, cams, levers and linkages to create movement Precisely apply their understanding of computing to program, monitor and control their products
Vocabulary	<p><u>Structures</u> cut, fold, join, fix</p> <p>structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic</p> <p><u>Mechanisms</u> slider, lever, pivot, slot, bridge/guide, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards, assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism names of tools, equipment and materials used</p> <p><u>Textiles</u> tools, fabrics, template, pattern pieces, mark out, join, decorate, finish</p>	<p><u>Structures</u> shell structure, three-dimensional (3-D), shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating, font, lettering, text, graphics, decision</p> <p><u>Mechanisms</u> mechanism, lever, linkage, pivot, slot, bridge, guide system, input, process, output, linear, rotary, oscillating, reciprocating</p> <p><u>Electrical Systems</u> series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip, control, program, system, input device, output device</p> <p><u>Textiles</u> fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam, allowance</p>	<p><u>Structures</u> Frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent.</p> <p><u>Mechanisms</u> pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor, circuit, switch, circuit diagram, annotated drawings, exploded diagrams, mechanical system, electrical system, input, process, output</p> <p><u>Electrical systems</u> reed switch, toggle switch, push-to-make switch, push-to-break switch, light dependent resistor (LDR), tilt switch, light emitting diode (LED), bulb, bulb holder, battery, battery holder, USB cable, wire, insulator, conductor, crocodile clip control, program, system, input device, output device, series circuit, parallel circuit</p> <p><u>Textiles</u> seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings,</p>

Cooking & Nutrition	<ul style="list-style-type: none"> • Explain hygiene and keep a hygienic kitchen. • Describe properties of ingredients and importance of varied diet. • Say where food comes from (animal, underground etc.) • Describe how food is farmed, home-grown, caught. • Cut, peel and grate with increasing confidence. • Read simple scales to measure and weigh out ingredients. 	<ul style="list-style-type: none"> • With growing confidence, prepare and cook a variety of predominantly savoury dishes safely and hygienically, mostly independently. • With growing confidence, use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. • With improving accuracy, explain that food is grown, reared and caught • Understand and apply the principles of a healthy and varied diet. E.g know that to be active and healthy, food and drink are needed to provide energy for the body. • Know where different foods are produced in different areas of the world. • Know that food is processed into different ingredients e.g. milk into butter. 	<ul style="list-style-type: none"> • With precision, prepare and cook a variety of predominantly savour dishes safely and hygienically including, where appropriate, the use of a heat source. • With precision, use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. • Explain precisely that food is grown, reared and caught giving examples of each. • Understand and apply the principles of a healthy and varied diet. E.g. know what different effects food types have on the body – impact of eating too much sugar. • Know how different foods are produced in different areas of the world. • Understand that some foods are seasonal and can give some examples.
Vocabulary	<p><i>fruit and vegetable names, names of equipment and utensils</i></p> <p><i>sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard</i></p> <p><i>flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients.</i></p>	<p><i>name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet</i></p>	<p><i>ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs, fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality, utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble</i></p>